

We claim:

1. A process for purifying and cooling a gas stream comprising a dialkyl ester A) of an aromatic dicarboxylic acid, which comprises treating the gas stream with an aliphatic dihydroxy compound B) at above the melting point of the dialkyl ester A) in a 1st stage and treating the gas stream with an aliphatic dihydroxy compound B) at above the melting point of the dihydroxy compound B) in at least one second stage.
2. A process as claimed in claim 1, wherein the dialkyl ester A) is an ester of terephthalic acid, isophthalic acid, 2,6-naphthalenedicarboxylic acid or a mixture thereof.
3. A process as claimed in claim 1 or 2, wherein the dialkyl ester A) has alkyl radicals having from 1 to 4 carbon atoms.
4. A process as claimed in any of claims 1 to 3, wherein the gas stream which is purified and cooled is a laden inert gas stream.
5. A process as claimed in any of claims 1 to 4, wherein the dihydroxy compound B) used is a diol having from 2 to 6 carbon atoms.
6. A process as claimed in any of claims 1 to 5, wherein the dihydroxy compound B) used is 1,4-butanediol.
7. A process as claimed in any of claims 1 to 6, wherein the dialkyl ester A) is dimethyl terephthalate.
8. A process as claimed in any of Claims 1 to 7, wherein the dihydroxy compound B) has a temperature above 140°C in the first stage and has a temperature of from 20 to 80°C in the second stage.
9. A process as claimed in any of claims 1 to 8, wherein the gas stream contains less than 20 ppm by weight of the aromatic dialkyl ester A) after purification and cooling.